

ABSTRACT OF THE DISCLOSURE

[0109] An implantable space-filling electrode system, adapted for insertion into a cochlea, includes an elongate electrode array and a positioner stored within a sheath. The electrode array has a multiplicity of electrode contacts carried on a flexible elongate carrier, which carrier is adapted for insertion into one of the spiraling ducts, e.g., the scala tympani, of the cochlea. The positioner is an elongate, flexible member, having a longitudinal channel or lumen that passes therethrough. The positioner is adapted to reside in and fill the space in the cochlear channel behind the electrode array so as to position and maintain the electrode array against a modiolar wall of the cochlea. A distal tip of the positioner is connected to the electrode array at one point near the distal tip of the electrode array, e.g., 3-6mm from the distal end of the electrode array. To insert the electrode system into the cochlea, a stylet wire is inserted into the channel or lumen of the positioner while the positioner and electrode array are held within the sheath. The sheath is then removed, and the electrode array and positioner are then gently guided and pushed through a cochleostomy into the cochlea by extending the stylet wire. As the positioner is thus inserted into the cochlea, the electrode array is carried along with it, thereby allowing both elements --the electrode array and the positioner-- to be implanted within the cochlea during a single implant operation. A guiding tube holds the proximal end of the electrode array and positioner in a desired parallel relationship as the insertion process commences.